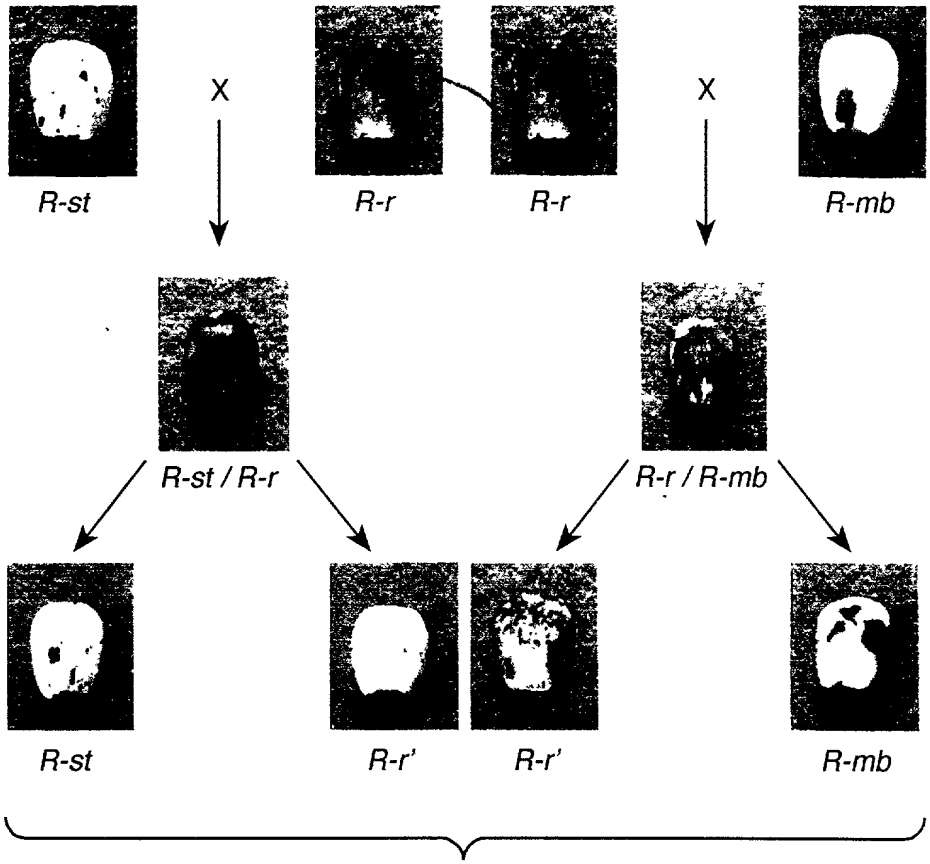


FIG._1A

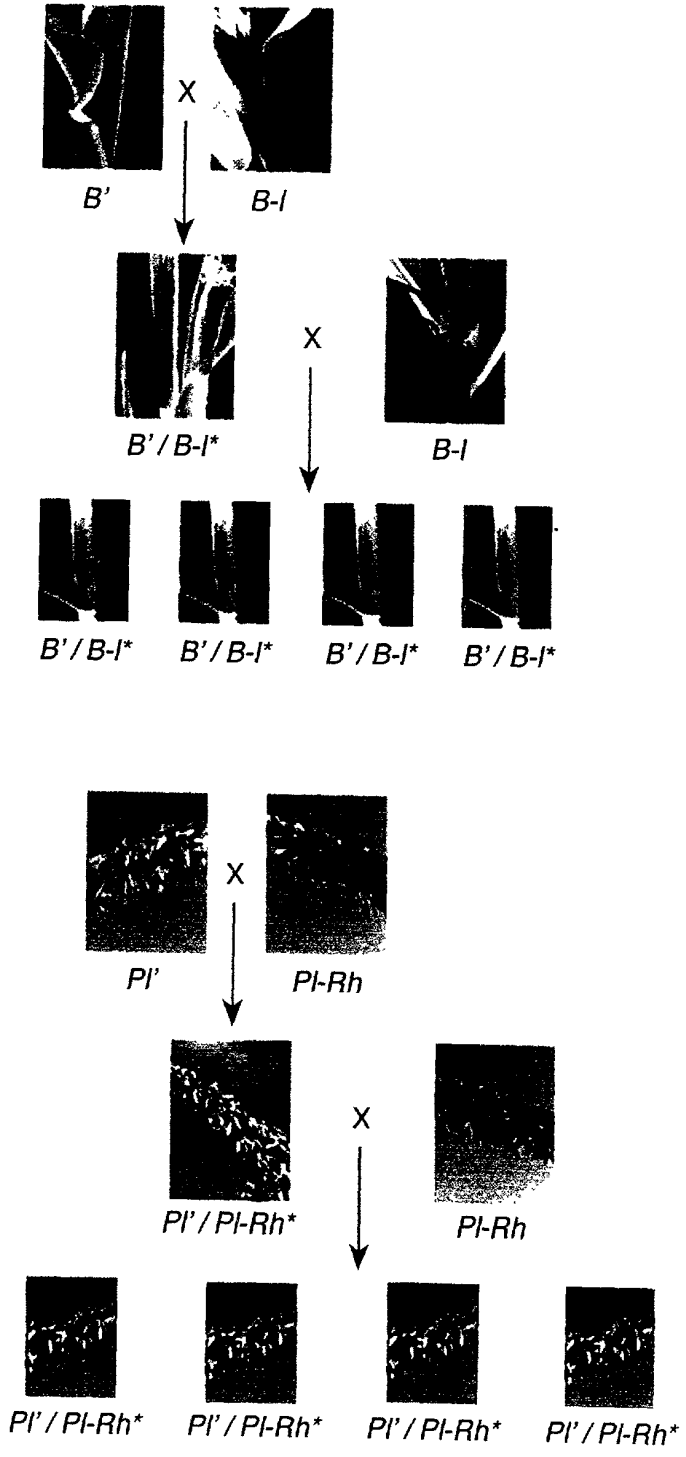

X
B'
B-I
X
B' / B-I*
B-I
B' / B-I*
B' / B-I*
B' / B-I*
B' / B-I*
X
Pl'
Pl-Rh
X
Pl' / Pl-Rh*
Pl-Rh
Pl' / Pl-Rh*
Pl' / Pl-Rh*
Pl' / Pl-Rh*
Pl' / Pl-Rh*

FIG._1B

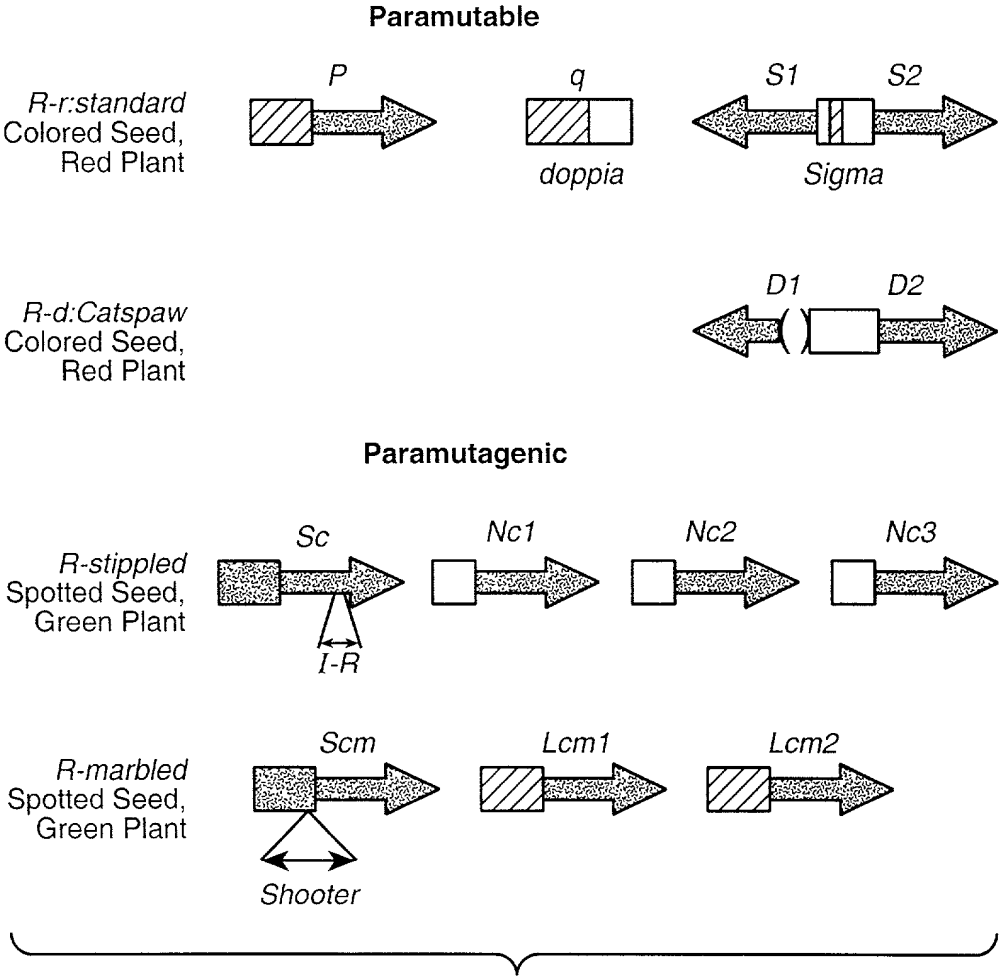

Paramutable
R-r:standard
Colored Seed,
Red Plant
P
q
S1
S2
doppia
Sigma
R-d:Catspaw
Colored Seed,
Red Plant
D1
D2
Paramutagenic
R-stippled
Spotted Seed,
Green Plant
Sc
Nc1
Nc2
Nc3
I-R
R-marbled
Spotted Seed,
Green Plant
Scm
Lcm1
Lcm2
Shooter

FIG._2A

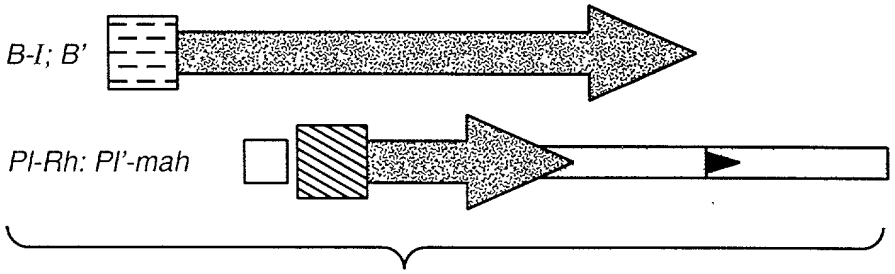

B-I; B'
Pl-Rh: Pl'-mah

FIG._2B

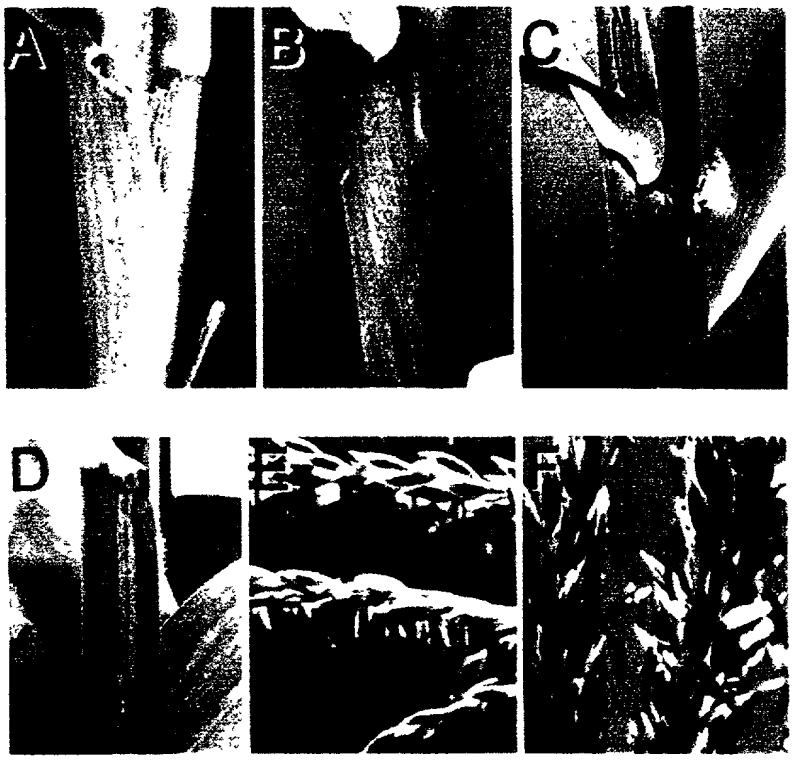


FIG._3A *B' Mop1 / mop1-1*

FIG._3B *B' mop1-1 / mop1-1*

FIG._3C *B-I Mop1 / Mop1*

FIG._3D *B' Sectors in a B' mop1-1 Plant*

FIG._3E *Pl' Mop1 / -*

FIG._3F *Pl' mop1-1 / mop1-1*

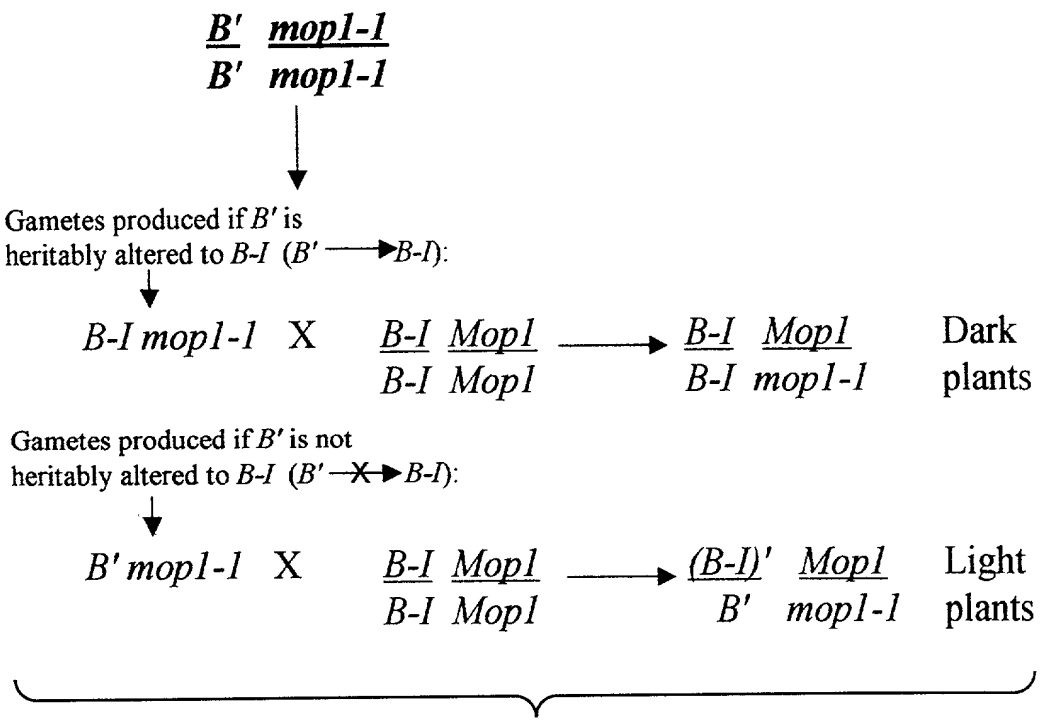

B' mop1-1
B' mop1-1
Gametes produced if B' is heritably altered to B-I (B' → B-I):
B-I mop1-1 X B-I Mop1 / B-I Mop1 → B-I Mop1 / B-I mop1-1 Dark plants
Gametes produced if B' is not heritably altered to B-I (B' → X B-I):
B' mop1-1 X B-I Mop1 / B-I Mop1 → (B-I)' Mop1 / B' mop1-1 Light plants

FIG._4A

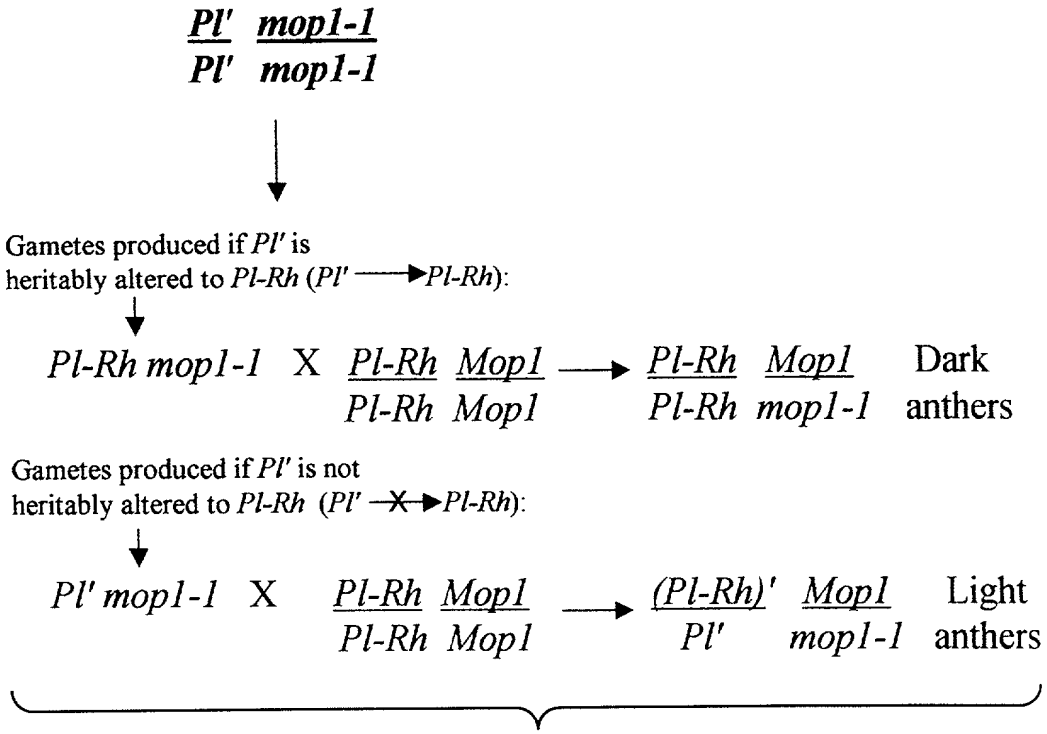

Pl' mop1-1
Pl' mop1-1
Gametes produced if Pl' is heritably altered to Pl-Rh (Pl' → Pl-Rh):
Pl-Rh mop1-1 X Pl-Rh Mop1 / Pl-Rh Mop1 → Pl-Rh Mop1 / Pl-Rh mop1-1 Dark anthers
Gametes produced if Pl' is not heritably altered to Pl-Rh (Pl' → X Pl-Rh):
Pl' mop1-1 X Pl-Rh Mop1 / Pl-Rh Mop1 → (Pl-Rh)' Mop1 / Pl' mop1-1 Light anthers

FIG._4B

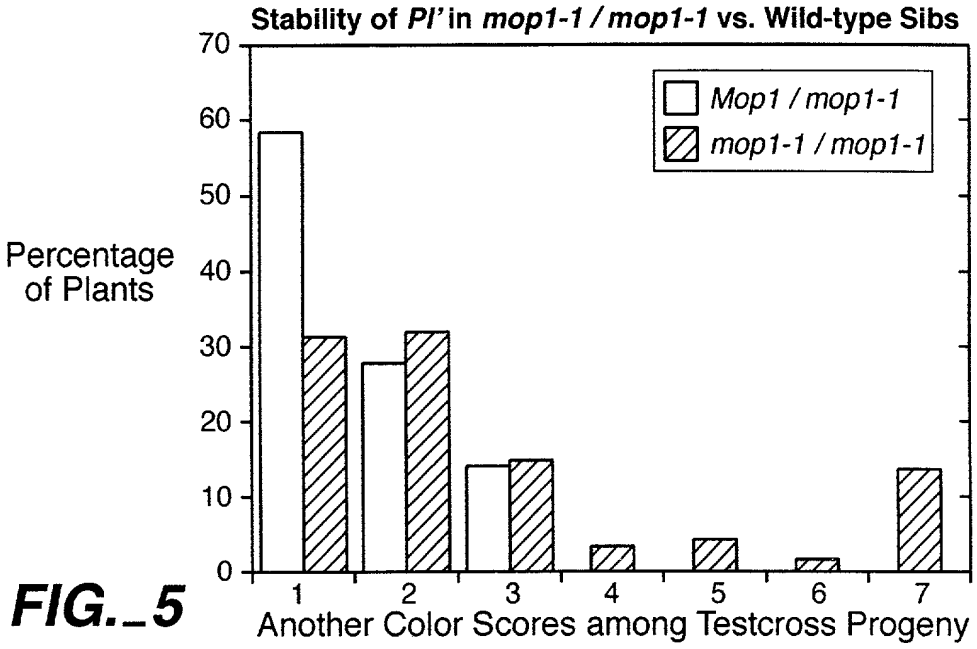


FIG._5

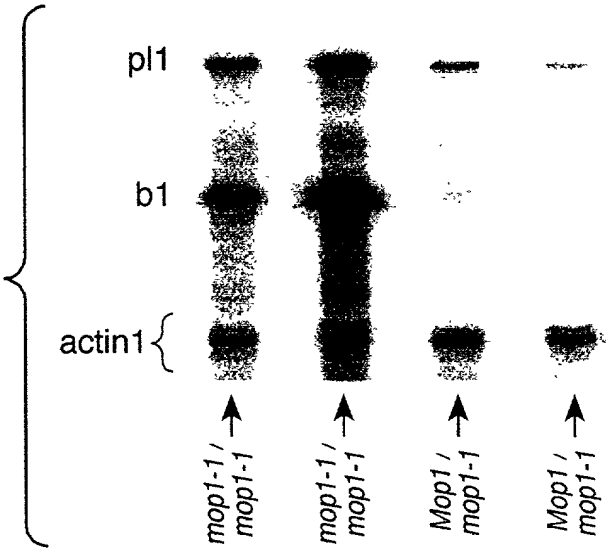


FIG._6A

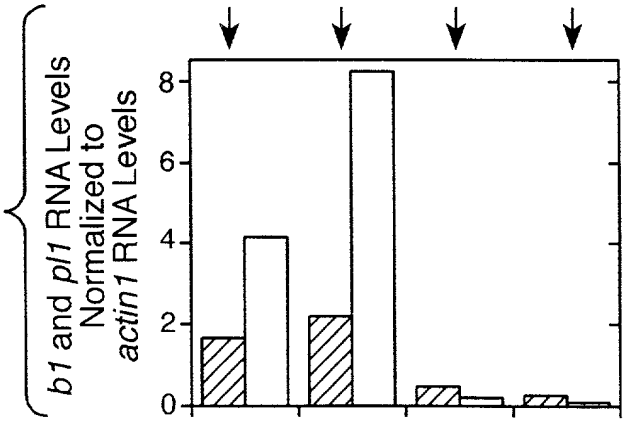


FIG._6B

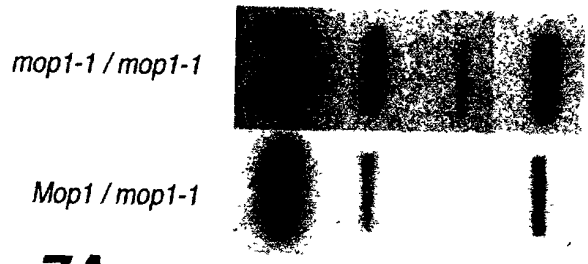


FIG._7A

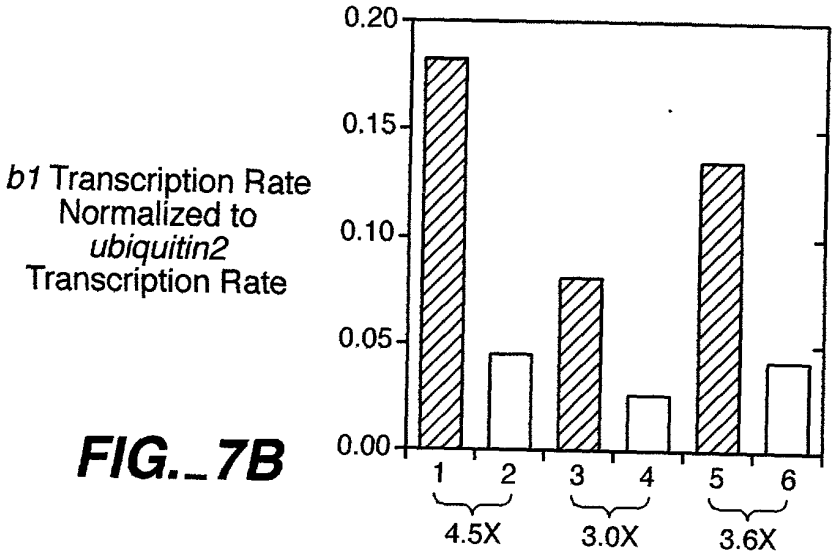


FIG._7B

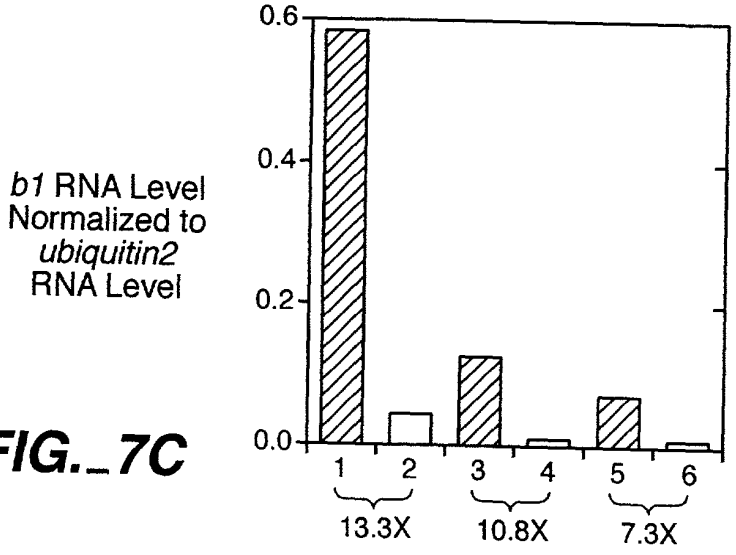


FIG._7C

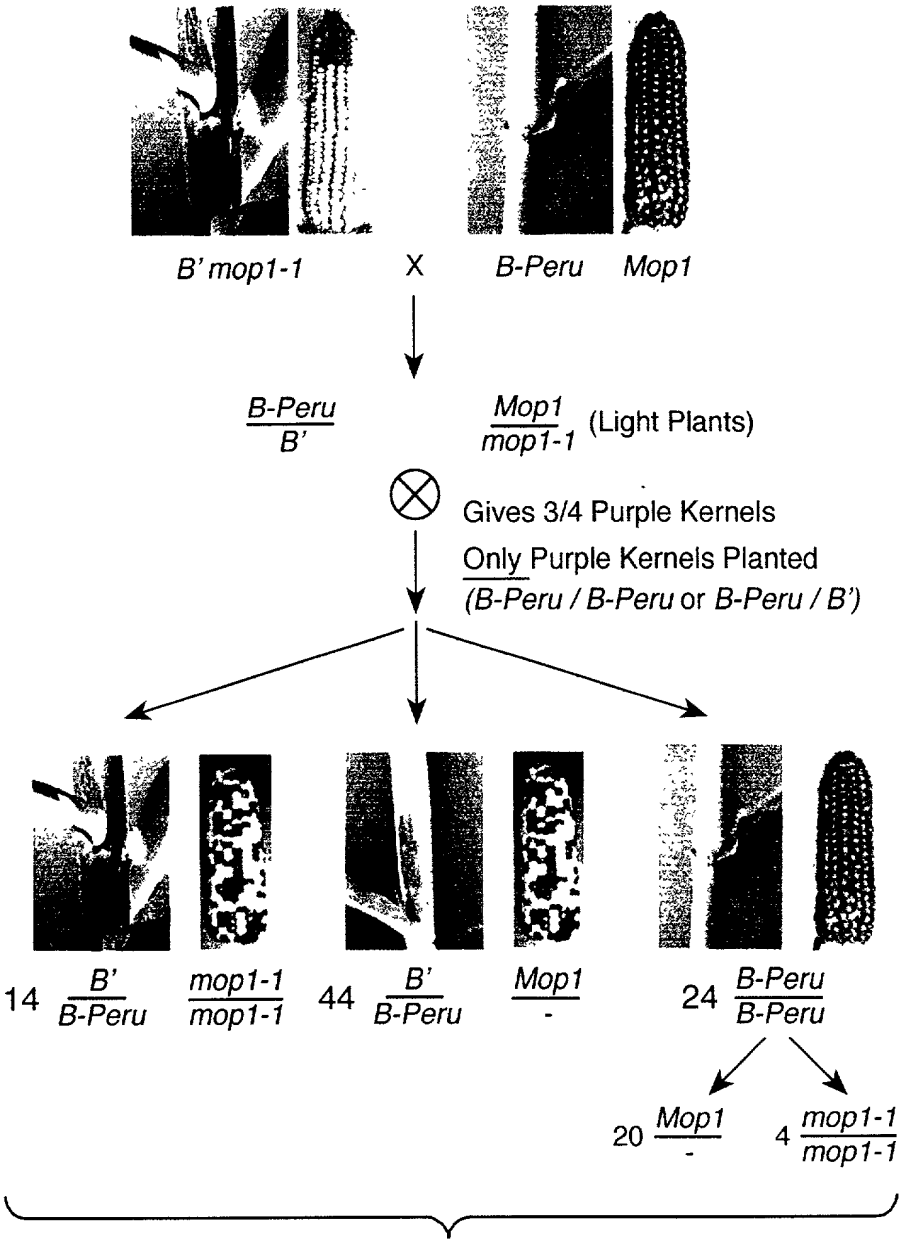
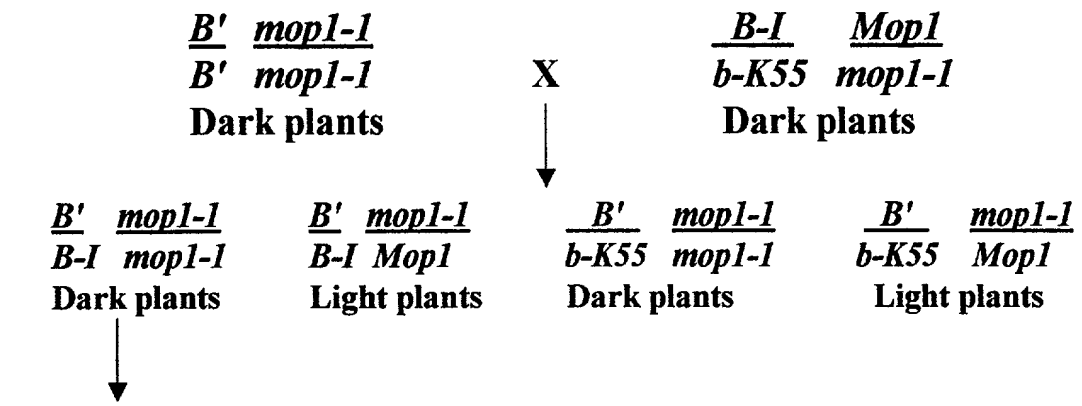

B' mop1-1
X
B-Peru
Mop1
B-Peru / B'
Mop1 / mop1-1 (Light Plants)
Gives 3/4 Purple Kernels
Only Purple Kernels Planted
(B-Peru / B-Peru or B-Peru / B')
14 B' / B-Peru
mop1-1 / mop1-1
44 B' / B-Peru
Mop1 / -
24 B-Peru / B-Peru
20 Mop1 / -
4 mop1-1 / mop1-1

FIG._8



Testcross (by *B-Peru/B-I Mop1/Mop1* tester--diagram shows only *B-Peru* gametes of tester)

Gametes produced if paramutation is prevented (*B-I* —X→ *B'*):

50% B' mop1-1 X *B-Peru Mop1* ⟶ *B' mop1-1 / B-Peru Mop1* Light plants

50% B-I mop1-1 X *B-Peru Mop1* ⟶ *B-I mop1-1 / B-Peru Mop1* Dark plants

Gametes produced if paramutation occurred (*B-I*⟶*B'*):

100% B' mop1-1 X *B-Peru Mop1* ⟶ *B' mop1-1 / B-Peru Mop1* Light plants

FIG._9

R-st / *r-g*	*B-bar* / *B'*	*pl-sr* / *Pl'*	*Mop1* / *mop1-1*	X	*R-d* / *r-g*	*B-bar* / *B'*	*pl-sr* / *Pl'*	*Mop1* / *mop1-1*

Four genotypes of interest among *R-d/- Pl'/-* progeny:

3/16	*R-d* / *r-g*	*Mop1* / -	Light plant
3/16	*R-d* / *R-st*	*Mop1* / -	Light plant
1/16	*R-d* / *r-g*	*mop1-1* / *mop1-1*	Dark plant
1/16	*R-d* / *R-st*	*mop1-1* / *mop1-1*	Dark plant

FIG._10A

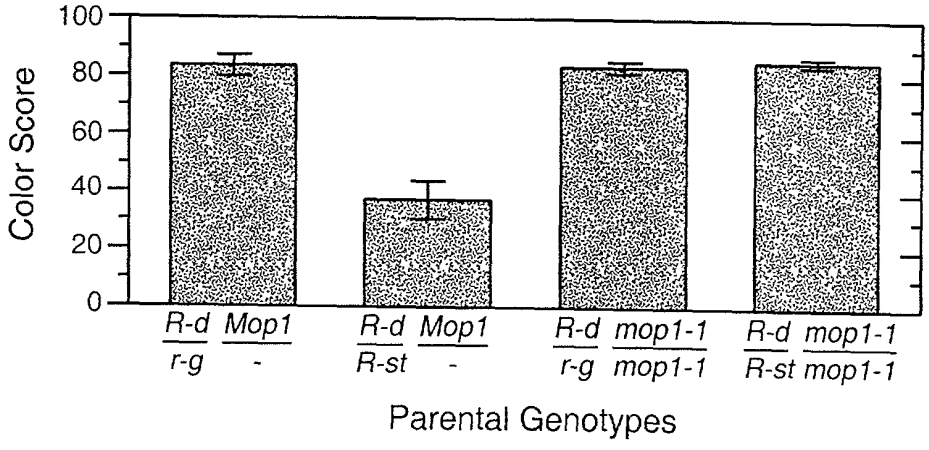


FIG._10B

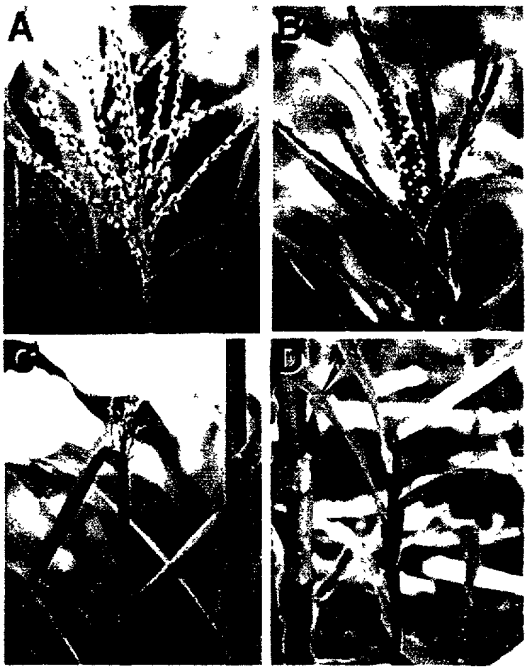


FIG._11A

FIG._11B

FIG._11C

FIG._11D

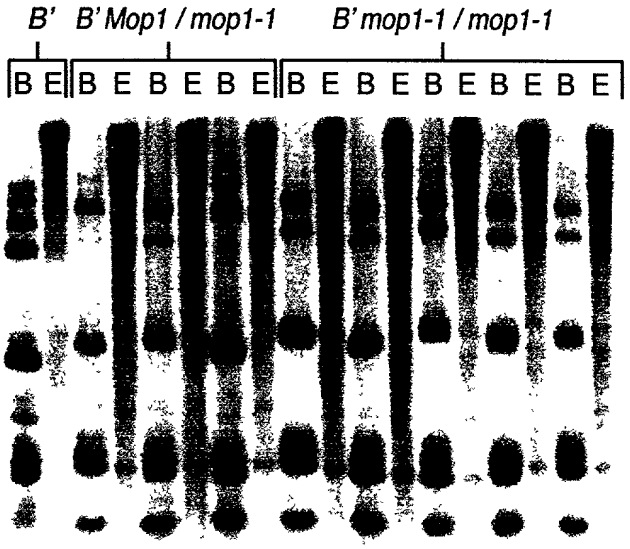


FIG._12A

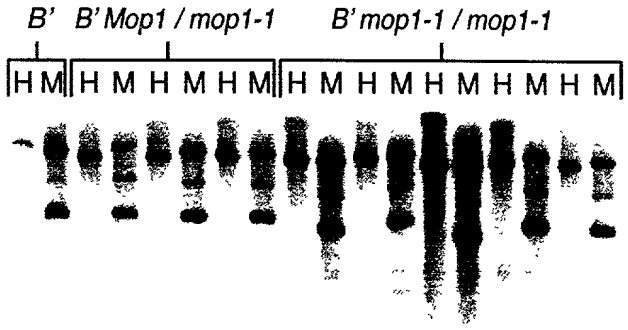


FIG._12B

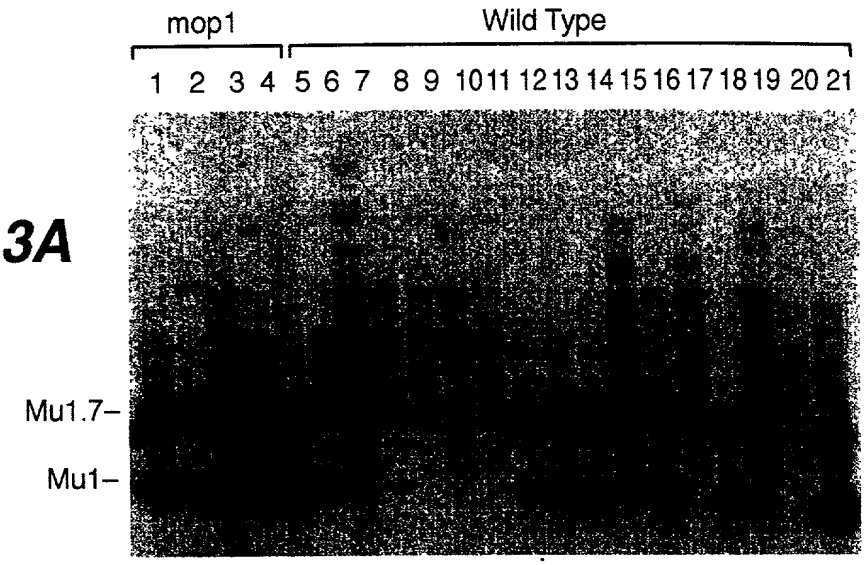


FIG._13A

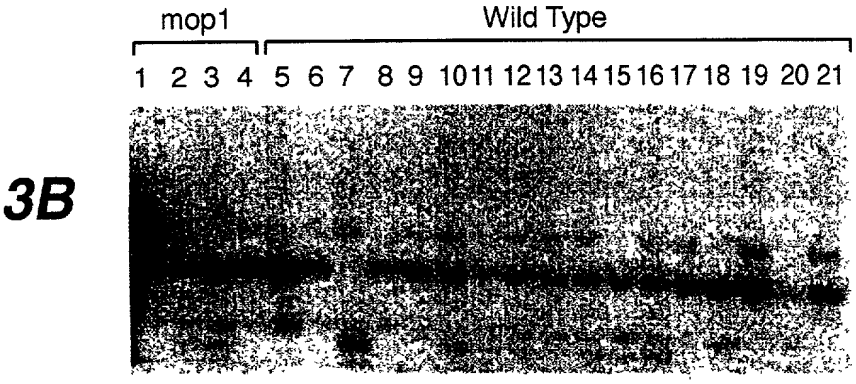


FIG._13B

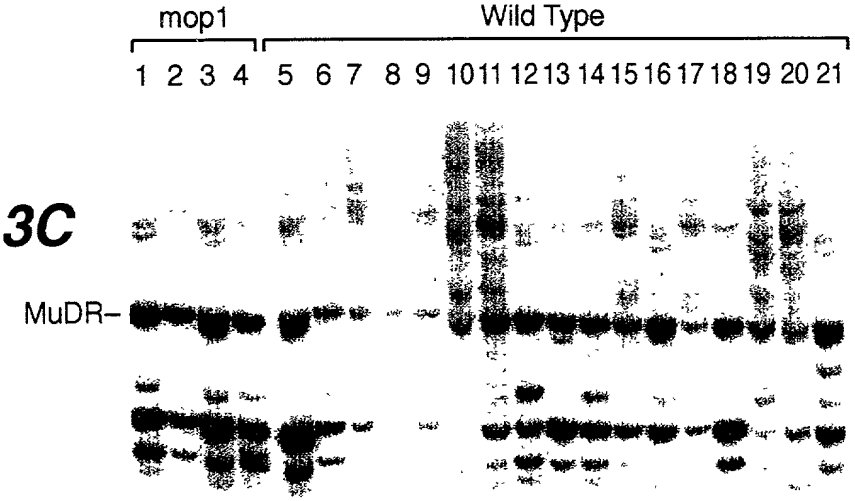


FIG._13C

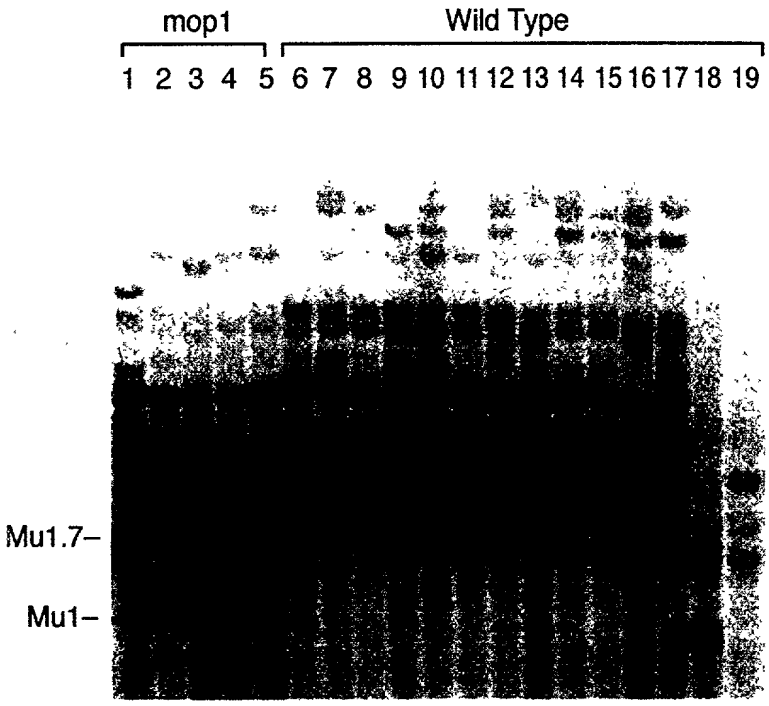


FIG._14A

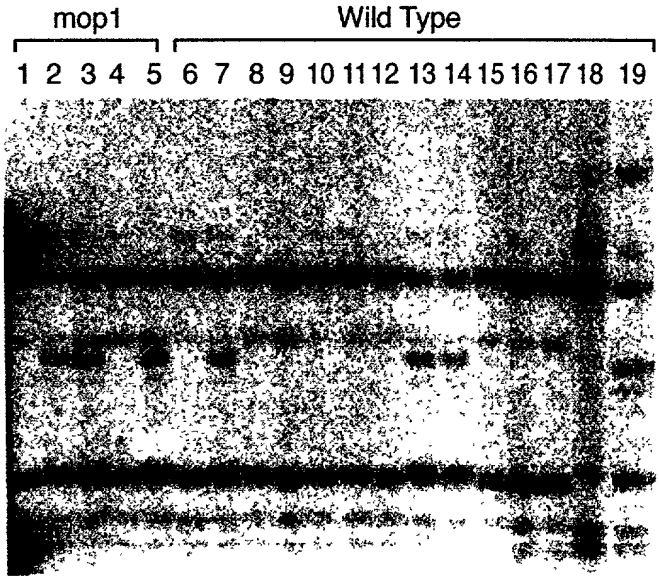


FIG._14B

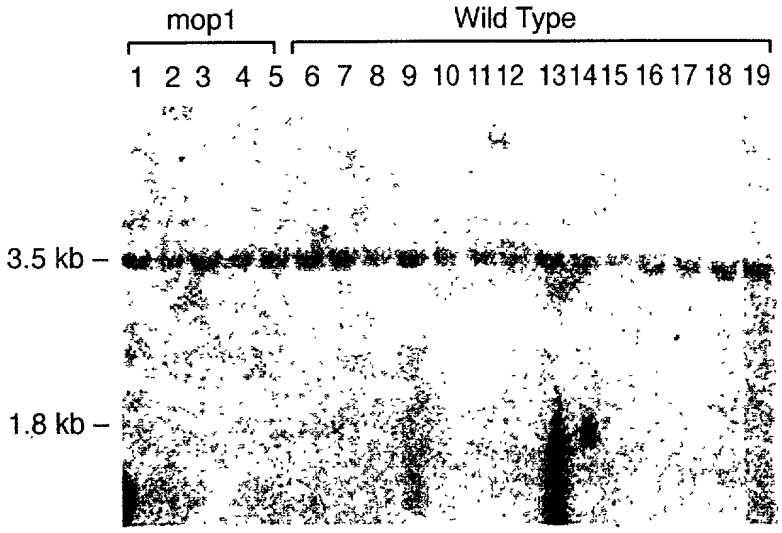


FIG._14C

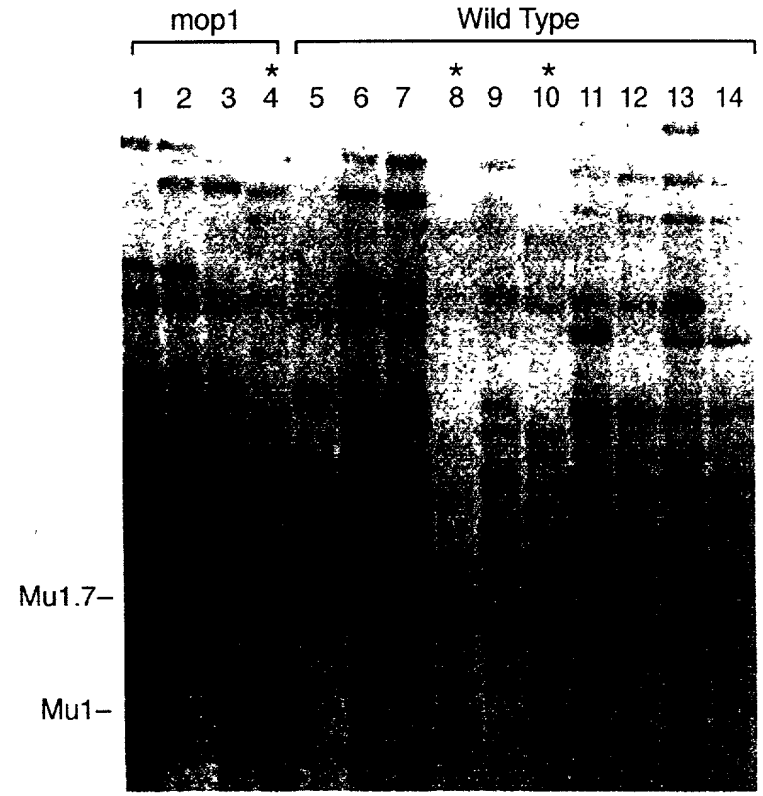


FIG._14D

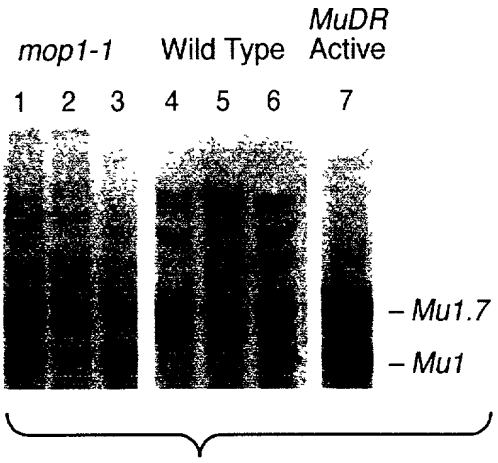


FIG._15A

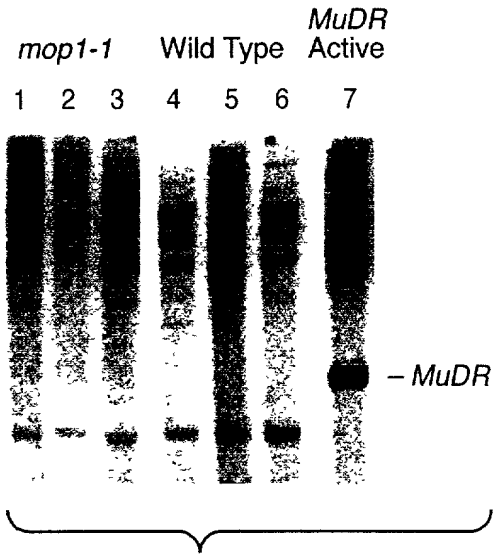


FIG._15B

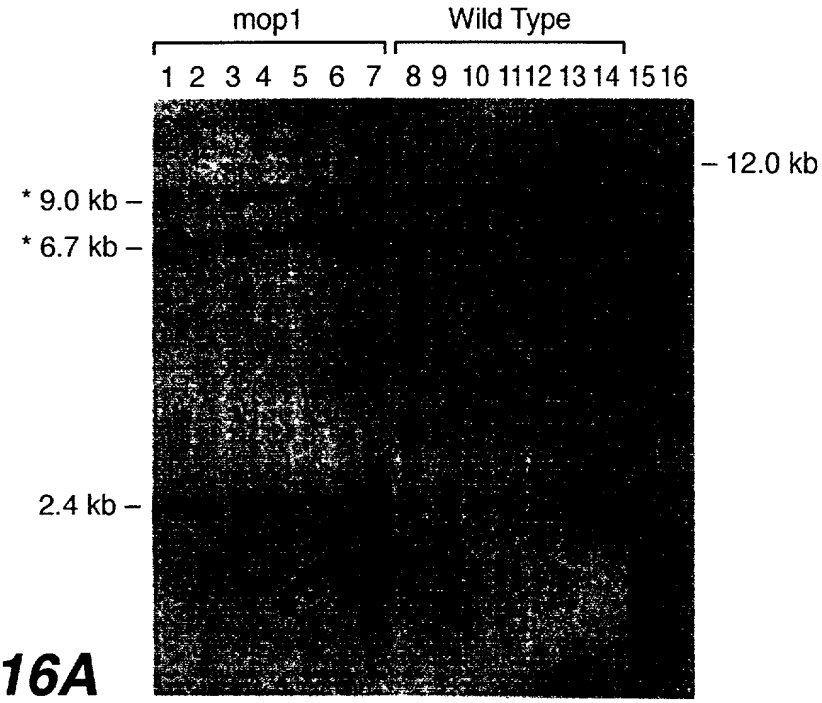


FIG._16A

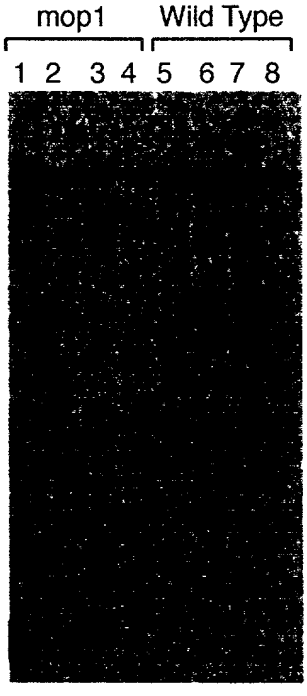


FIG._16B

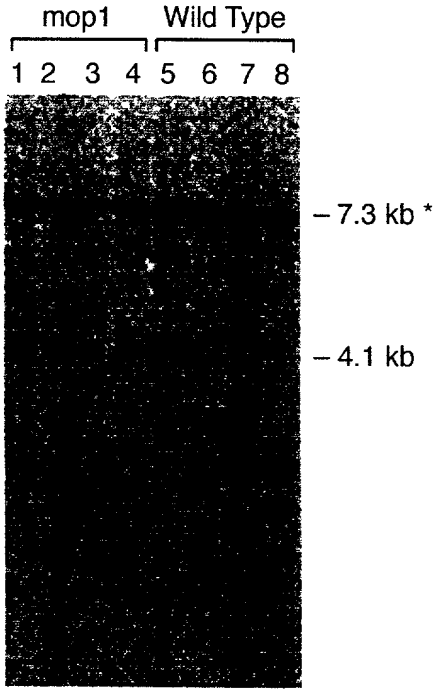


FIG._16C

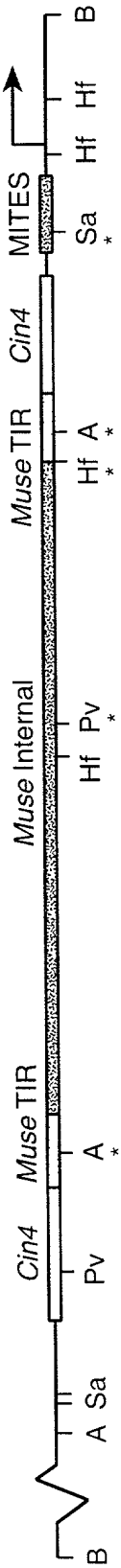

B
A Sa
Pv
Cin4
Muse TIR
A
*
Hf Pv
*
Muse Internal
Muse TIR
Hf A
* *
Cin4
Sa
*
MITES
Hf Hf
B

FIG._16D

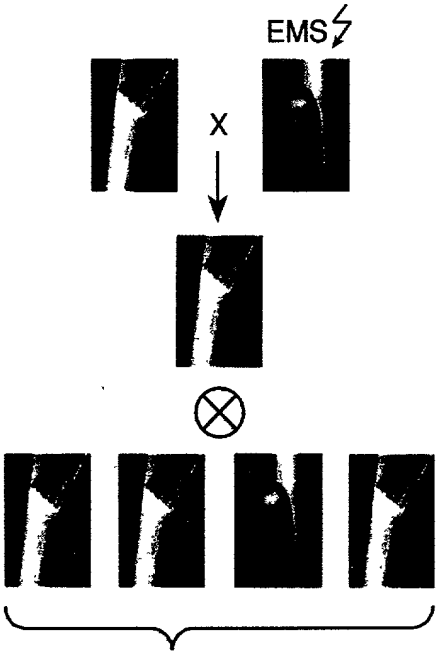


FIG._17

FIG._18A

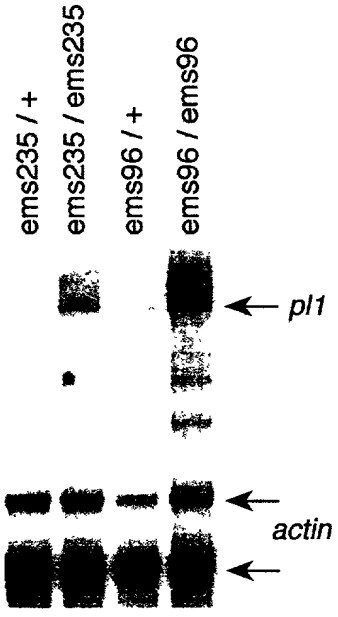


FIG._18B

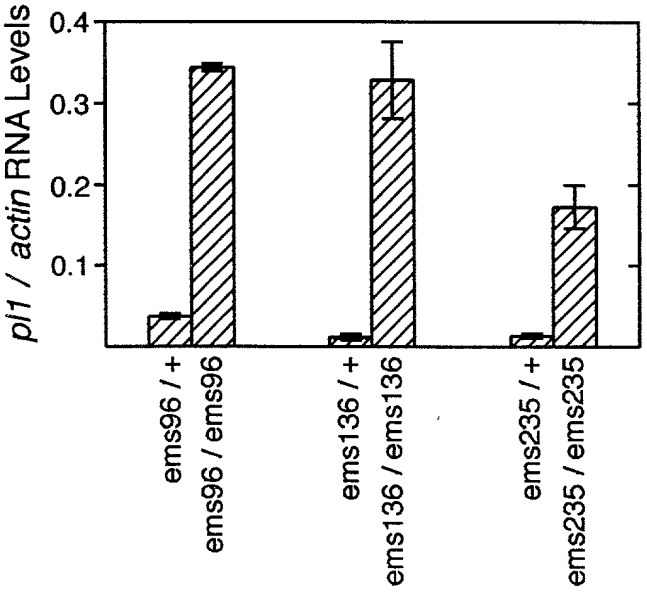


FIG._18C

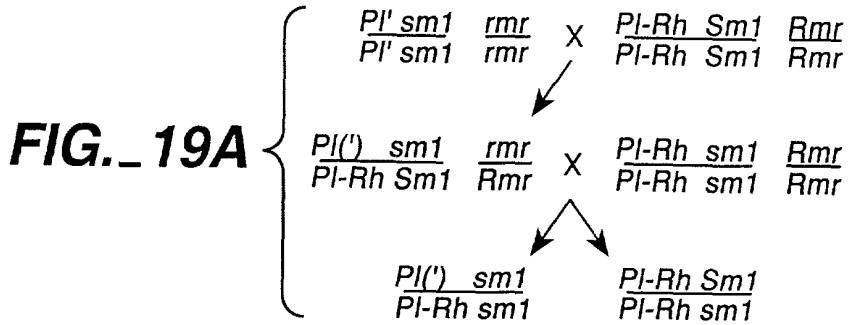


FIG._19A

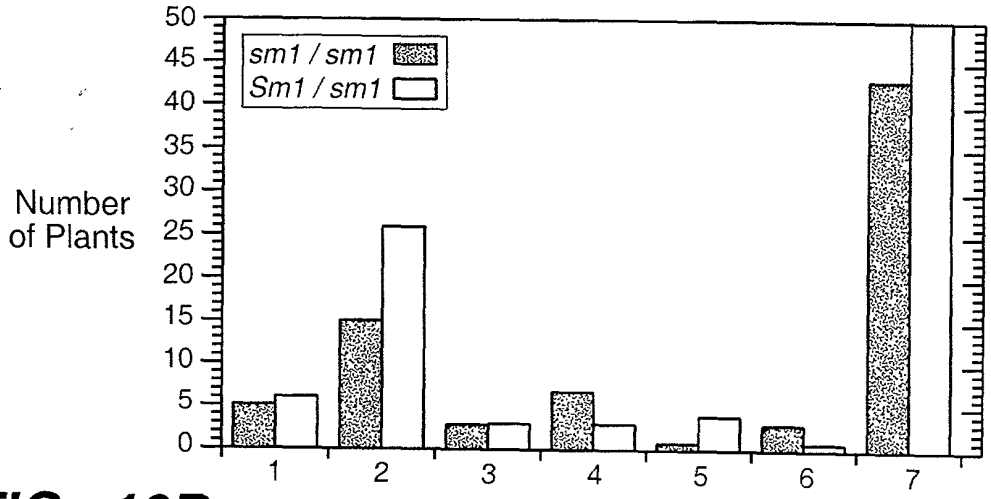


FIG._19B

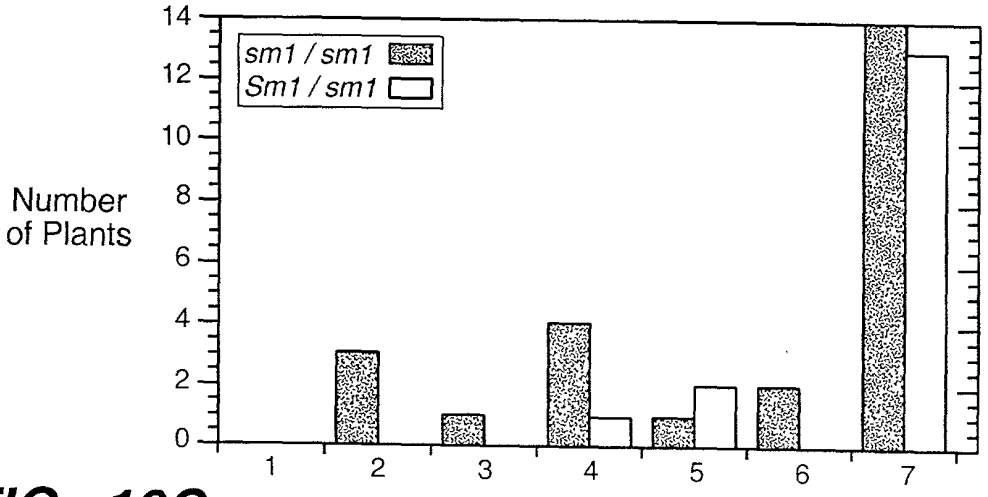


FIG._19C

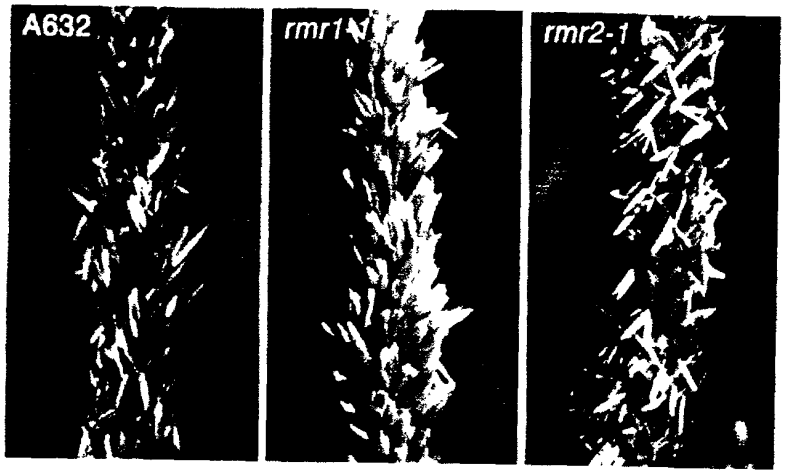


FIG._20

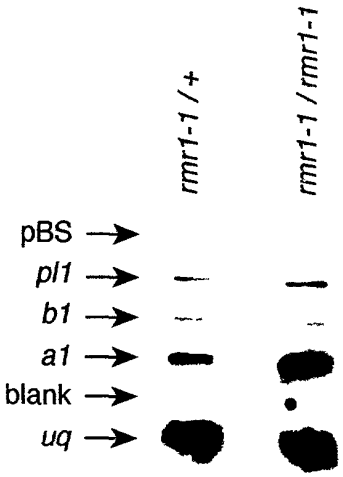


FIG._21A

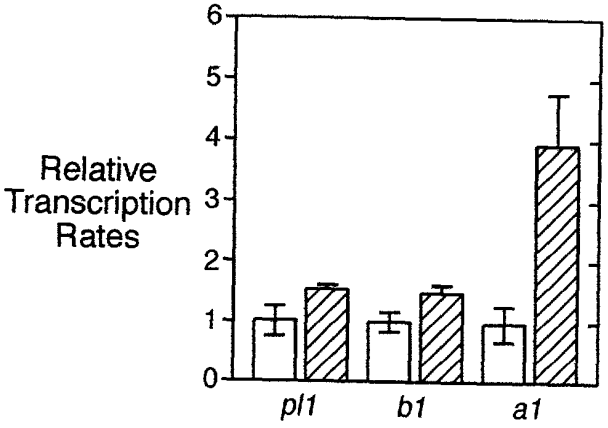


FIG._21B

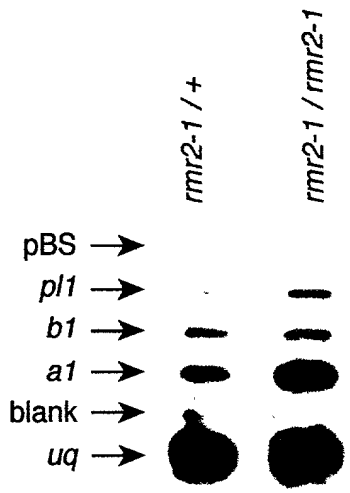


FIG._22A

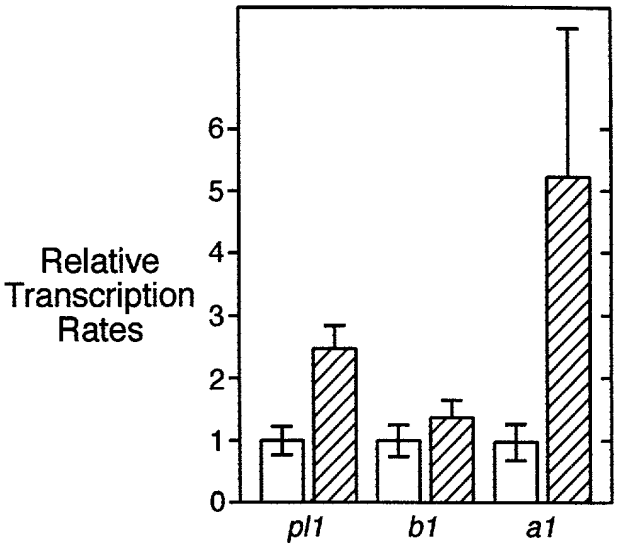


FIG._22B

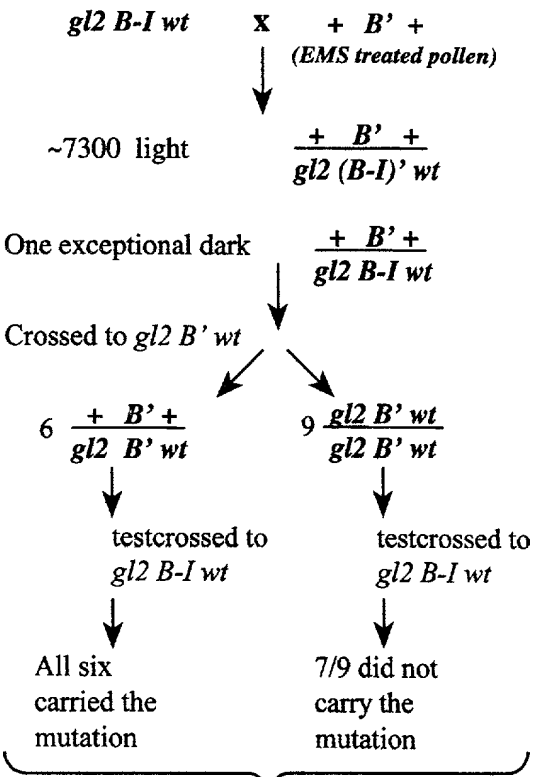


FIG._23

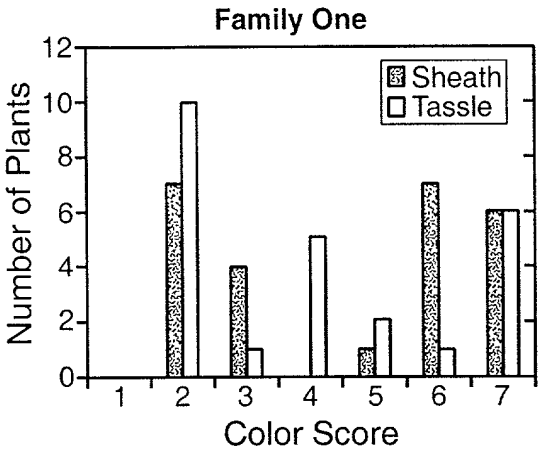


FIG._24A

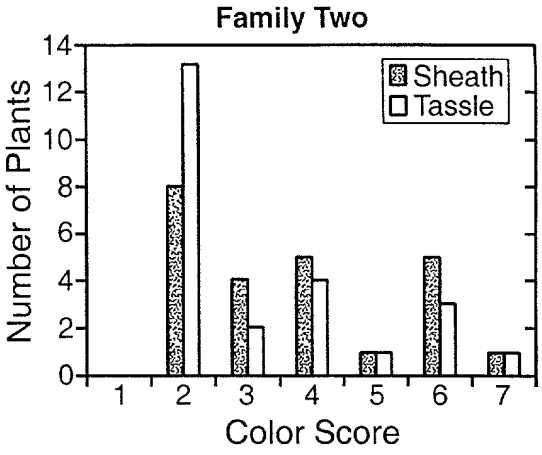


FIG._24B

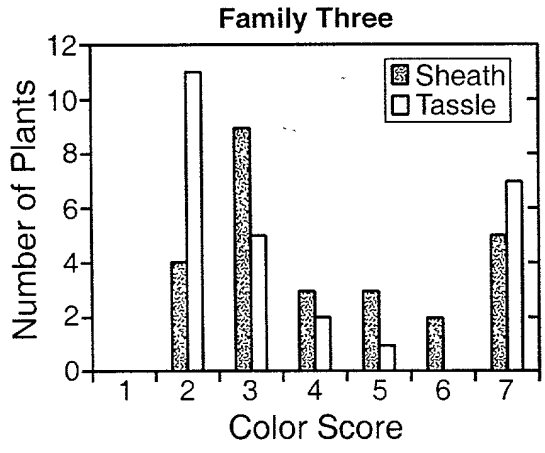


FIG._24C

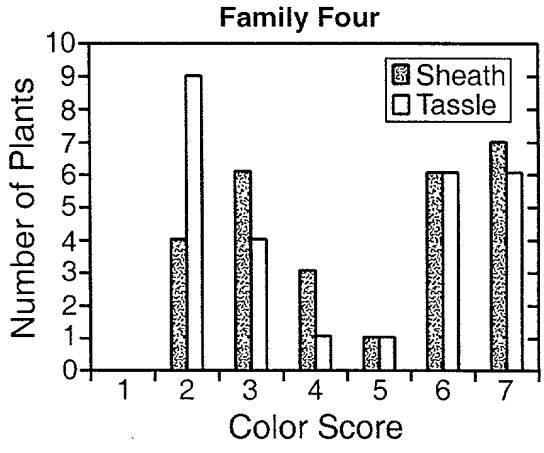


FIG._24D

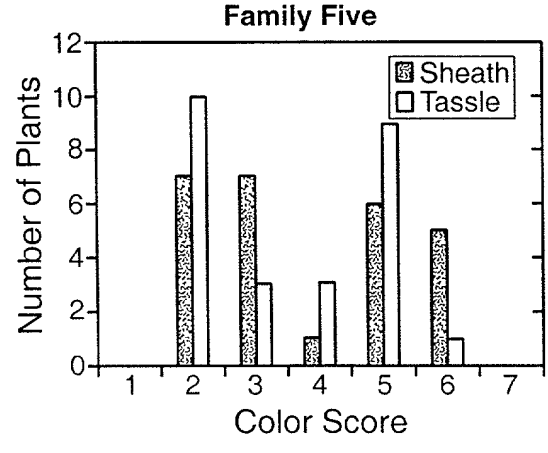


FIG._24E

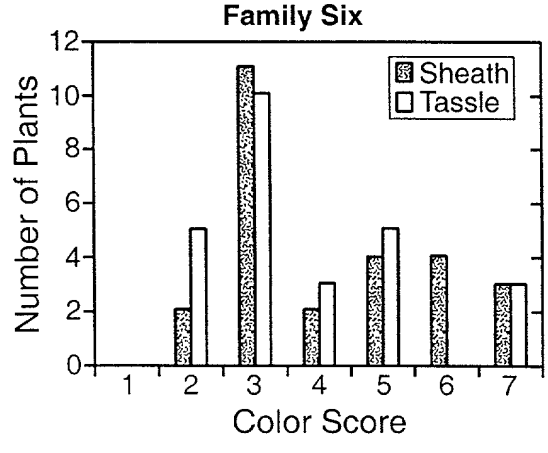


FIG._24F

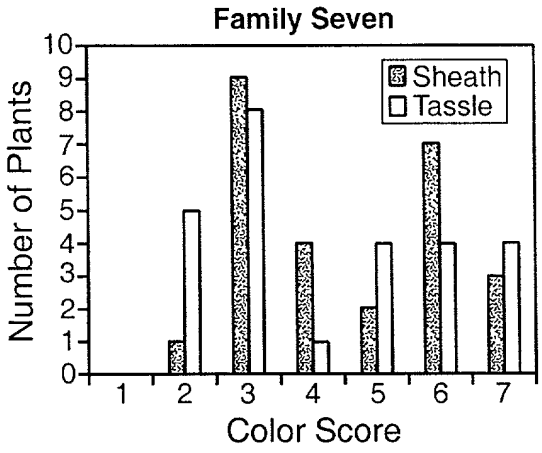


FIG._24G

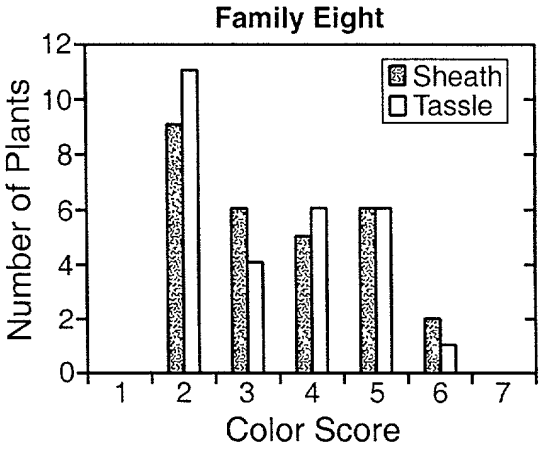


FIG._24H

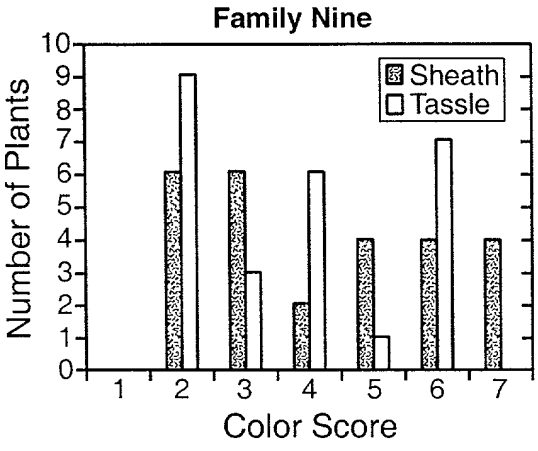


FIG._24I

FIG._25B

FIG._25A

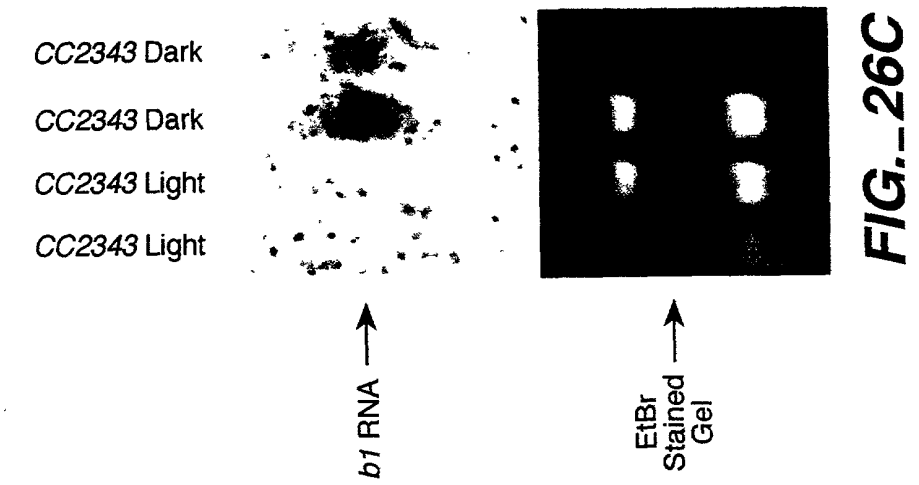


FIG._26C

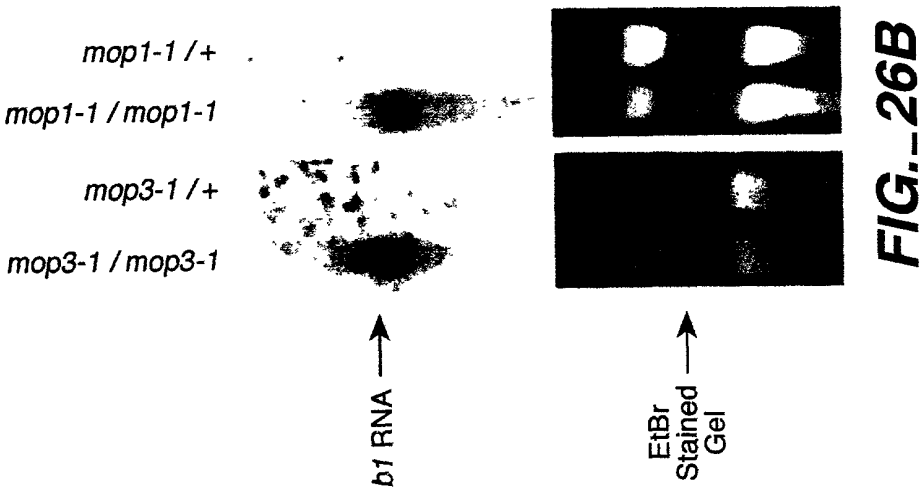


FIG._26B

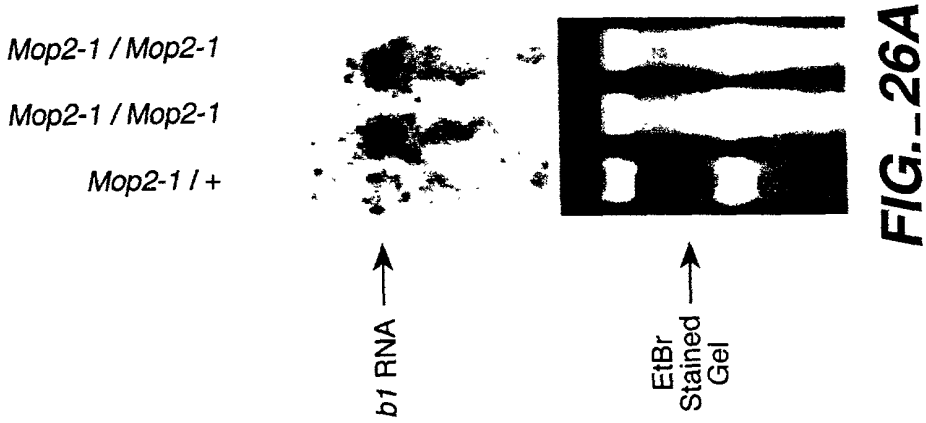


FIG._26A

FIG._27A

FIG._27B

FIG._27C

FIG._27D

FIG._27E

FIG._27F

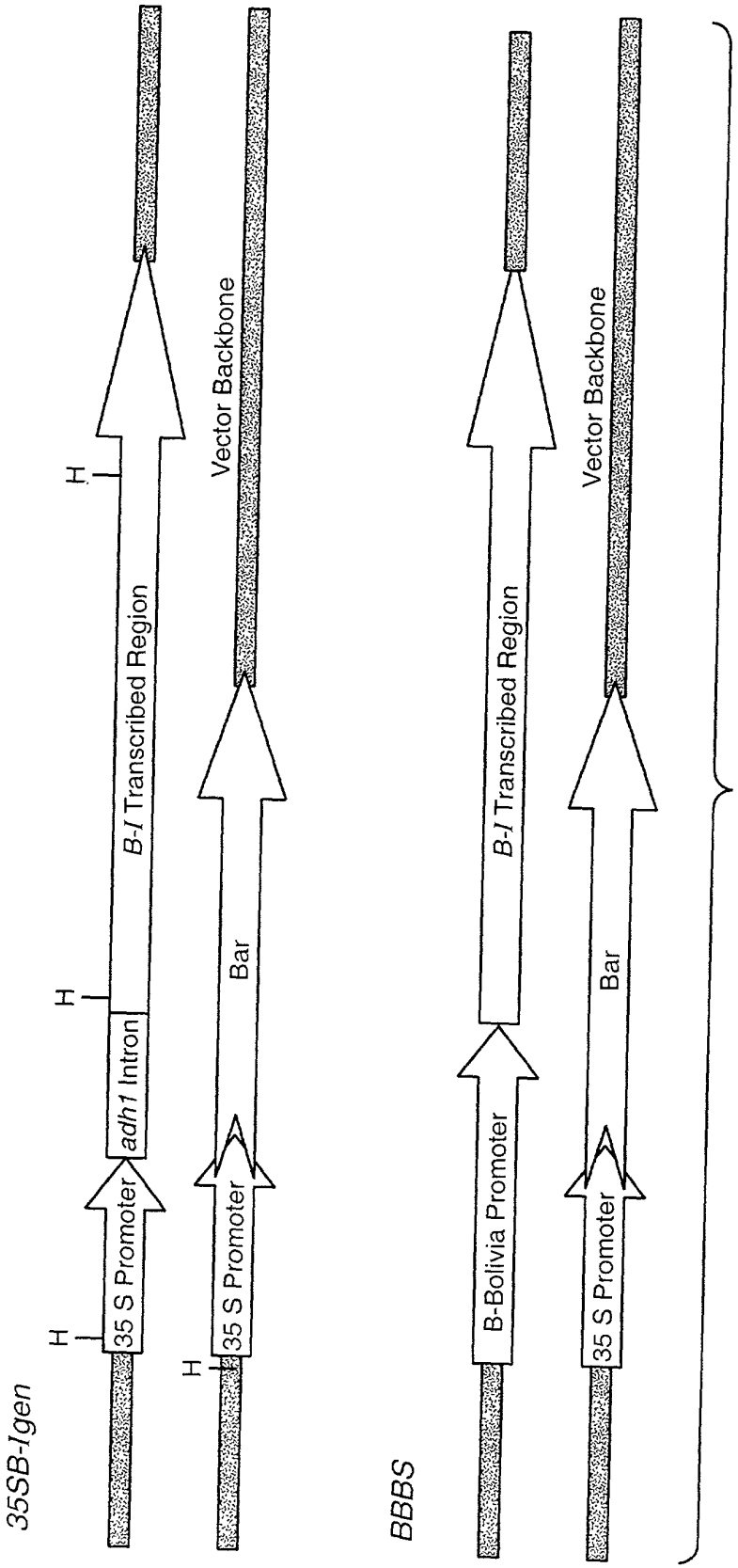

35SB-Igen
H
35 S Promoter
adh1 Intron
H
B-I Transcribed Region
H
Bar
H
35 S Promoter
Vector Backbone
BBBS
B-Bolivia Promoter
B-I Transcribed Region
35 S Promoter
Bar
Vector Backbone

FIG._28

FIG._29A

B' Mop2-1 / mop2 *B' Mop2-1 / Mop2-1*
35SB-I

FIG._29B

rmr2-1 / rmr2-1 *Rmr2 / rmr2-1*
35SB-I

FIG._29C

B' mop1-1 / mop1-1 *B' Mop1 / mop1-1*
35SB-I

FIG._29D

rmr1-1 / rmr1-1 *Rmr1 / rmr1-1*
35SB-I

Rmr2 / rmr2-1 *rmr2-1 / rmr2-1*
BBBS

FIG._29E

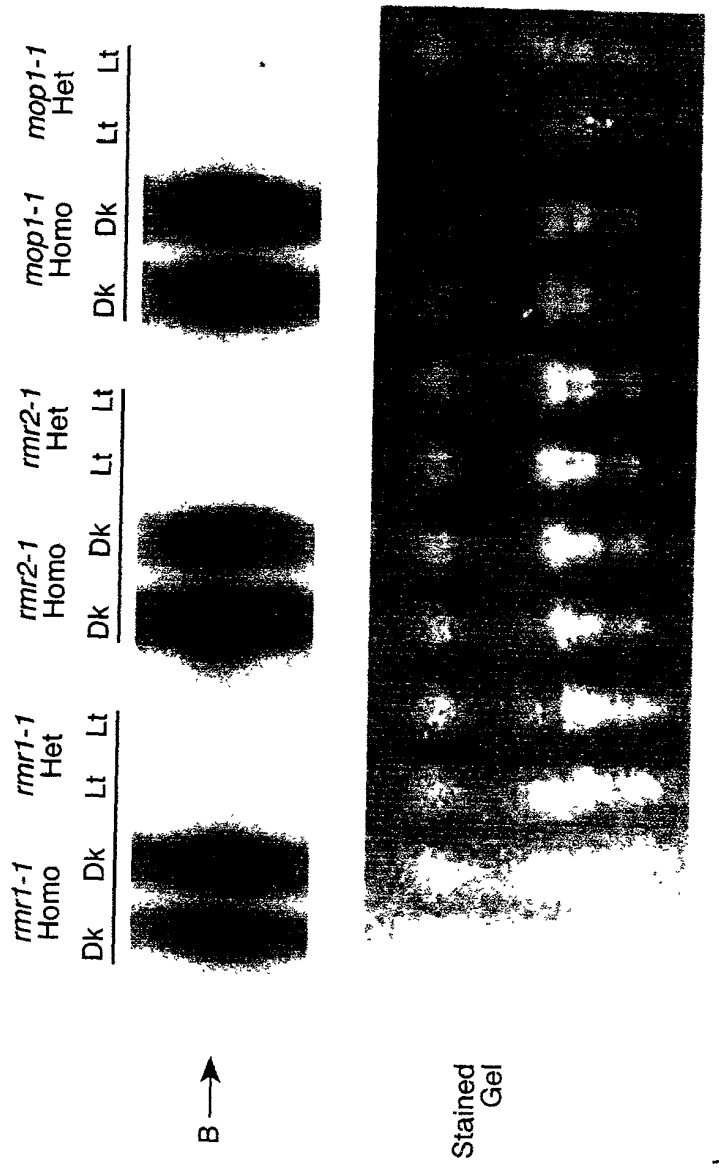

rmr1-1 Homo
Dk Dk
rmr1-1 Het
Lt Lt
rmr2-1 Homo
Dk Dk
rmr2-1 Het
Lt Lt
mop1-1 Homo
Dk Dk
mop1-1 Het
Lt Lt
B
Stained Gel

FIG._30

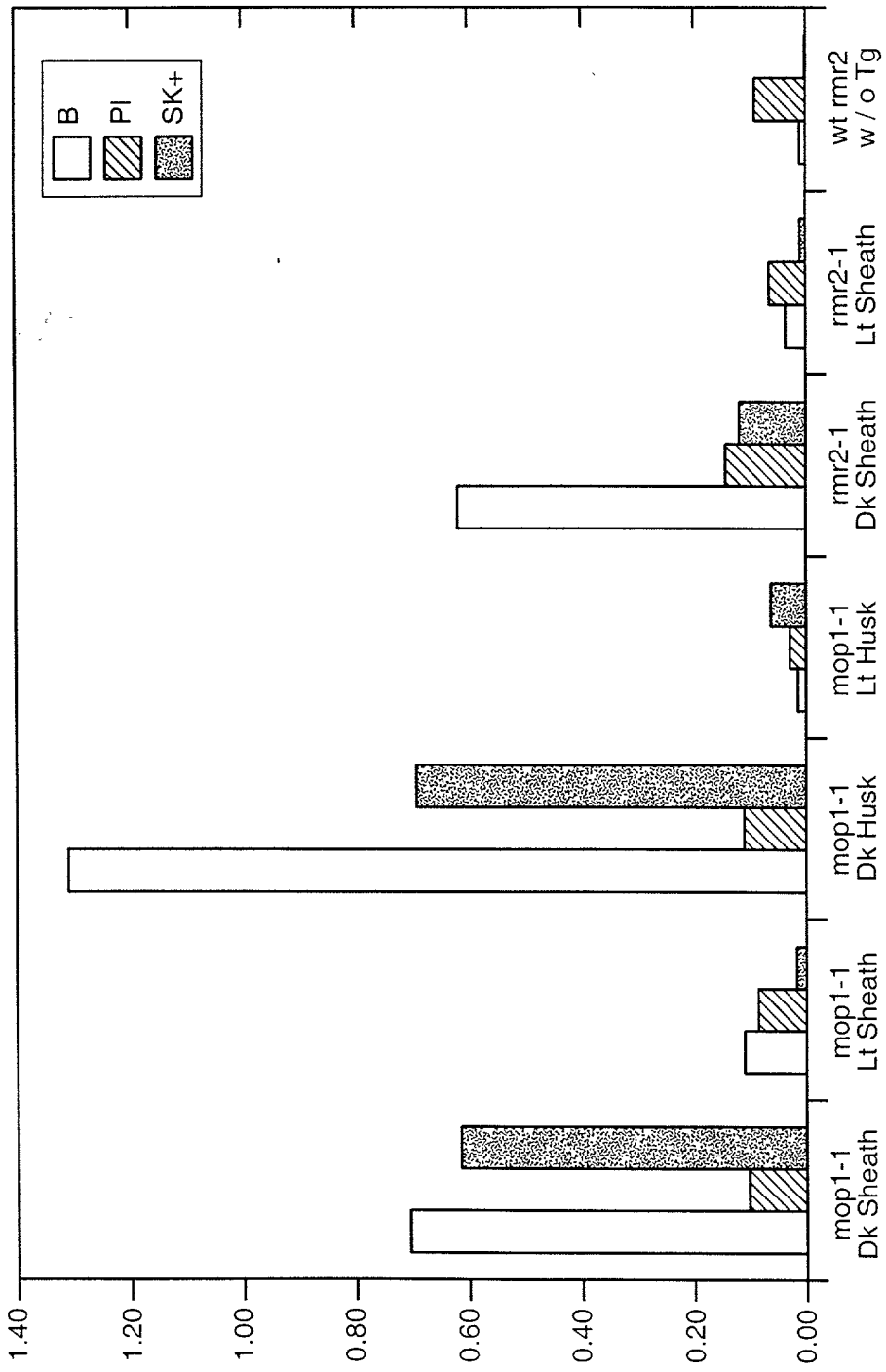

B
PI
SK+
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
mop1-1 Dk Sheath
mop1-1 Lt Sheath
mop1-1 Dk Husk
mop1-1 Lt Husk
rmr2-1 Dk Sheath
rmr2-1 Lt Sheath
wt rmr2 w / o Tg

FIG._31

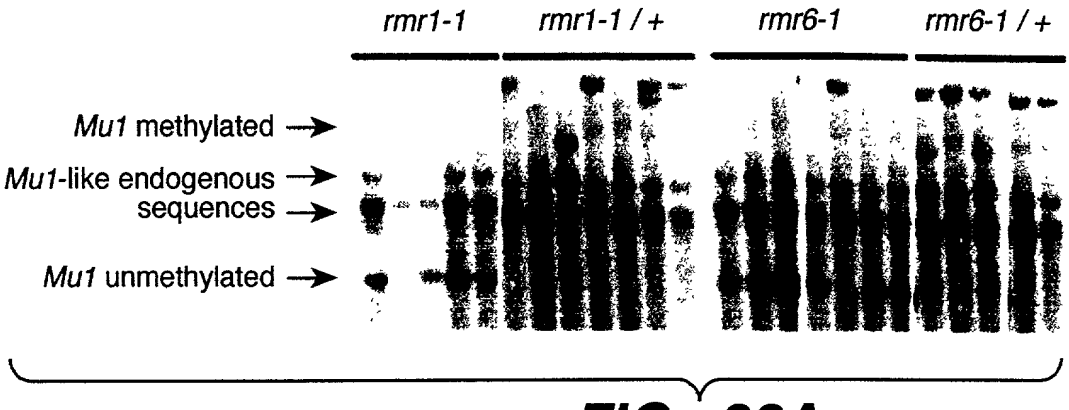


FIG._32A

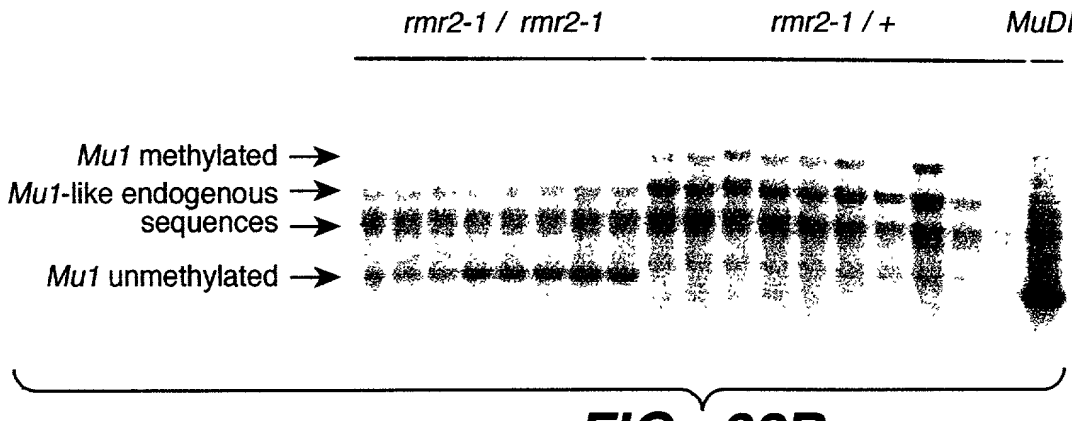


FIG._32B

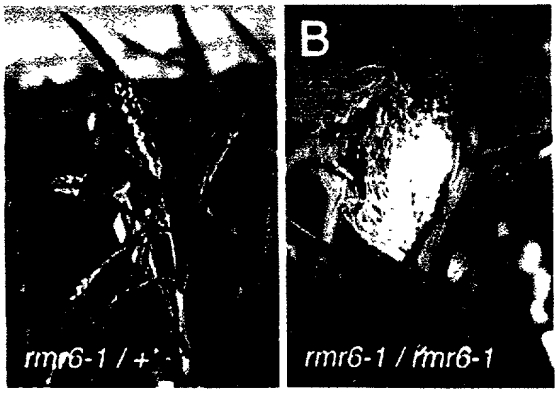


FIG._33A FIG._33B

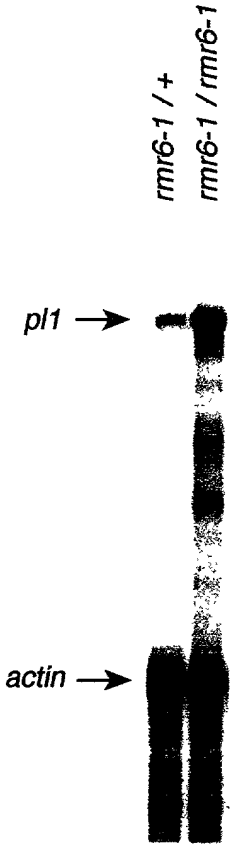


FIG._34A

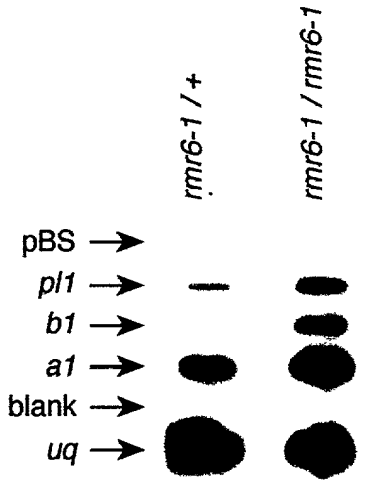


FIG._34B

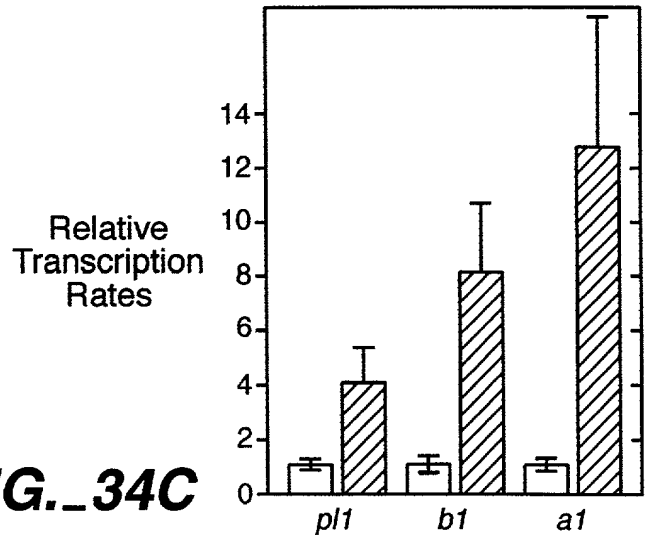


FIG._34C